HO CHI MINH UNIVERSITY OF TECHNOLOGY
FACULTY OF COMPUTER SCIENCE AND ENGINERRING

Information Systems Programming

Intergration Project

Yugioh-card Database

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1. Introduction

In this small project, I will design a small application website to scan the QR code of Yugioh card. The website also displays a database of Yugioh cards to search for information. This app is very useful for Yugioh card store owners to manage their cards and information. The goal of the project is to learn how to manage data, manipulate information, and program.

2. Requirement Analysis

The requirements of the application can be categorized as follows:

- A product with QR code.
- The application scans the QR code.
- The application contacts the server for the product information.
- Server proccesses the request and return the information.
- The application displays that information to the user.

3. Implementation

3.1. The Database

3.1.1. DBMS used

For this small project, I create a simple Yugioh-card database using MySQL. MySQL is a relational database management system based on SQL – Structured Query Language. The application is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications. The most common use for mySQL is for the purpose of a web database.

3.1.2 Database design

The database is a table named yugioh and have the following attributes:

- The card id in the database (**id**): unique, primary key.
- The card name (**card_name**).
- The card type (**card_type**). Ex: Monster, Spell, Trap.
- The Set of the card is in (**card_set**).
- The price of the card on the market (**price**).

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	id 🔑	int(9)			No	*None*		AUTO_INCREMENT	Change Drop More
☐	2	card_name	varchar(50)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	3	card_type	varchar(20)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	4	card_set	varchar(5)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	5	price	float			Yes	*NULL*			Change Drop More

Figure 1. The yugioh database design

3.2. The application

3.2.1. Language used

For this project, I created a simple web application that can read QR codes and manipulate the data in the database. The application is using Javascript/HTML/CSS for user interface and PHP to connect to the mySQL database. The QR code is using Javascript's instascan.

3.2.2. User Interface

Below is the UI of the application, it includes the Camera screen to scan QR, a section to type in the information, and the database display.

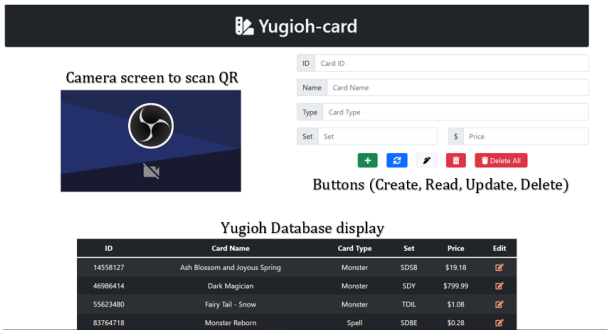

Figure 2. The UI of the web application

Since this application can only be opened in the localhost, users need to install xampp, and turn on apache and mysql option.

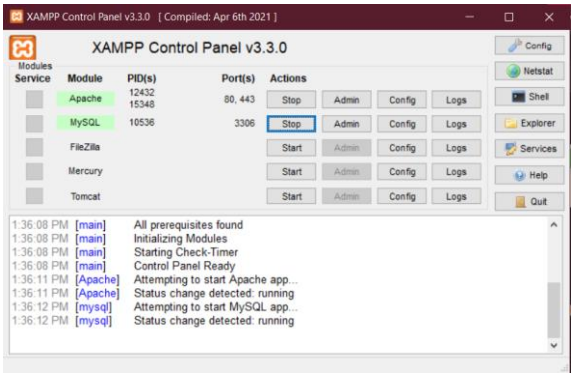

Figure 3. Xampp Control Panel

The source code to implement the application is in the zip file that comes along with this report.

4. User Manual

In this section, I will demonstrate how to use the web application.

4.1. Create the data

- Step 1: Open the application. (User needs to connect to xampp, turn on the Apache and MySQL option)
- Step 2: Input the information needed (Card ID, Card Name, Card Price, Card Set, Price)

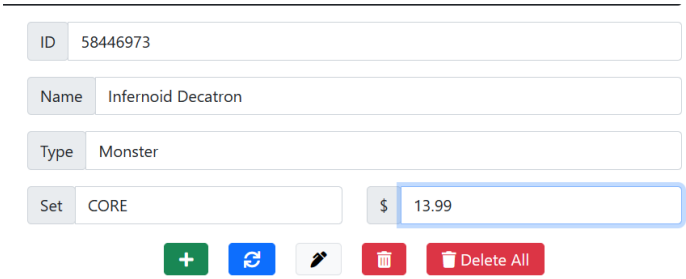

Figure 4. Create the data

- Step 3: Press the + green button.
- Step 4: The card data has been successfully inserted to the database.

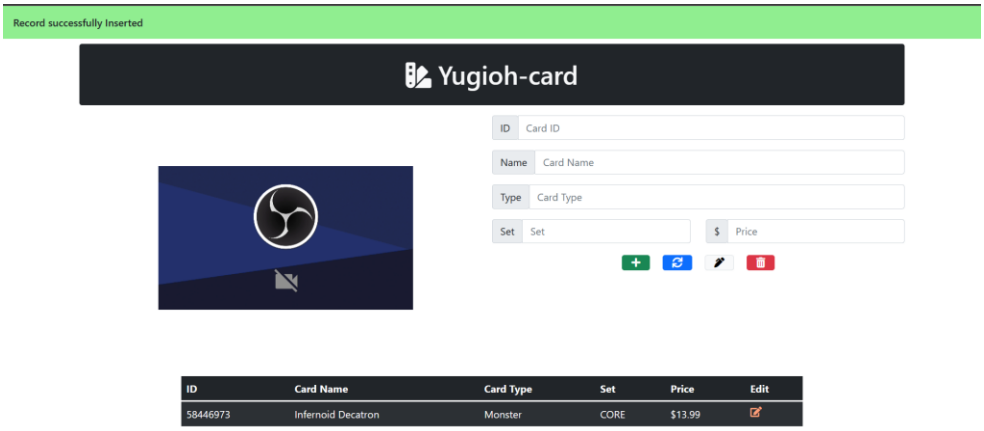

Figure 5. The record has been successfully inserted to the database

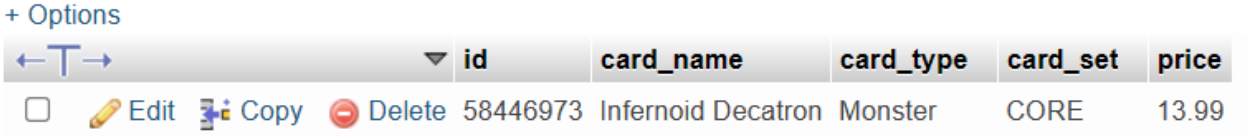

Figure 6. The record has been successfully inserted to the database (MySQL)

Note: User can scan an sample QR code to create data to it. Just simply go to the QR folder, and scan the Sample.png QR code, it will display a ID of an empty card. User can then type the information needed and press + button to add the card data to the database.

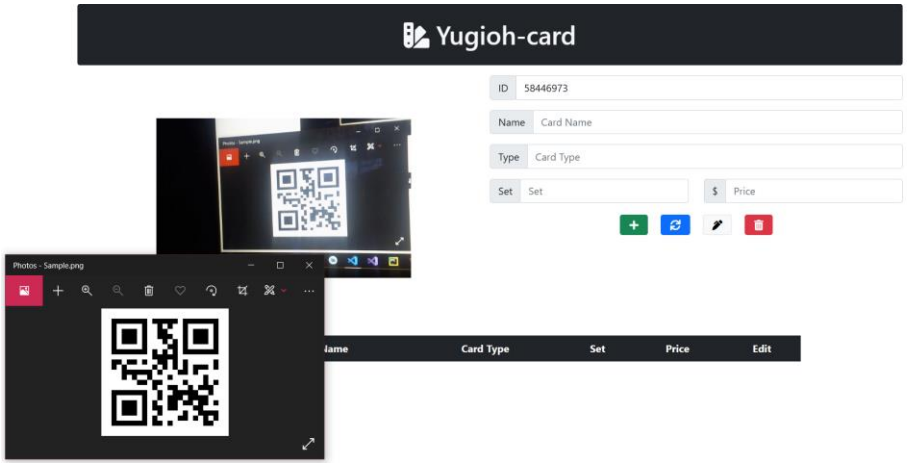

Figure 7. Add data using Sample.png

4.2. Read the data

Of course, user can always see the database information on the UI itself, but to see the individual card information, there are two ways to do it.

Option 1: Read directly on the UI

In this option, simply clicks on the Edit button at the end of the wanted row.

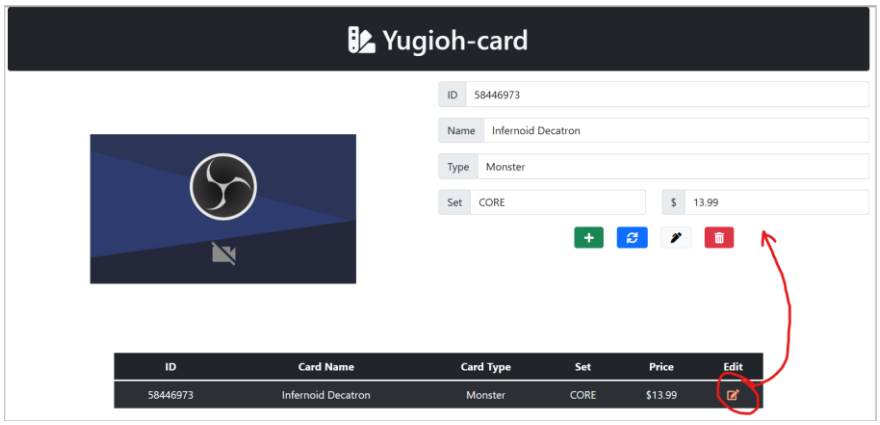

Figure 8. Read the card's information

Option 2: Scan the card's QR code

Each card on the database has its own QR code, the QR code holds the card ID only (for easier to edit). Simply just scan the QR code of the card to the camera and it will read the card information.

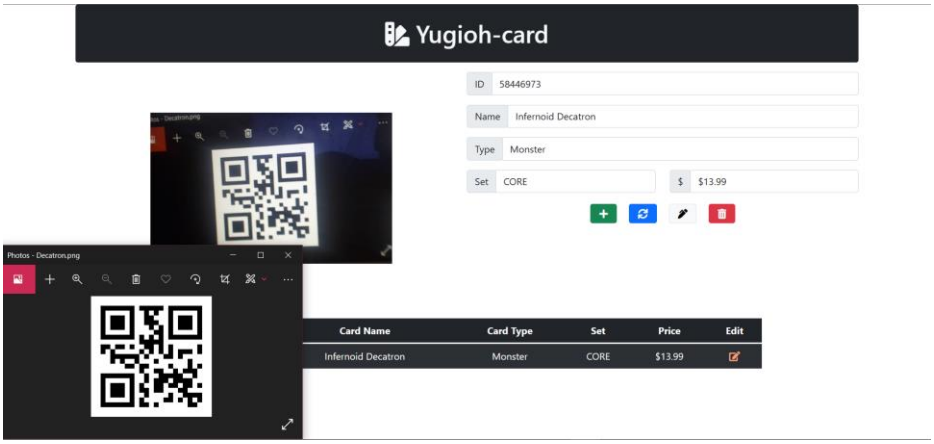

Figure 9. Read the card's information by QR scan

Note: The QR scanner only read the QR of the card that already appears on the database.

4.3. Update the data

To update any card's information, user needs to read the card first (either by clicking the edit button or reading the QR code, guided in section 4.2). Then type the new information of the card (except for the ID). After that, click the Update button, then the information of the card will be updated.

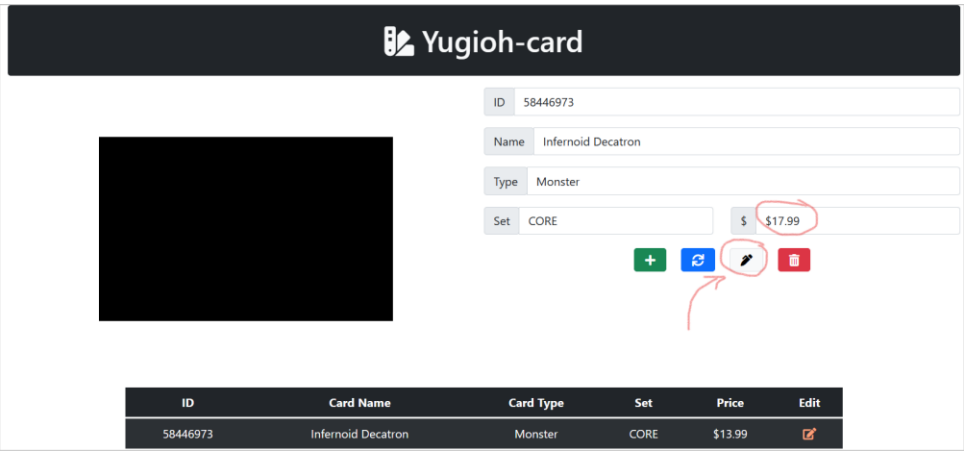

Figure 10. Update the card's information

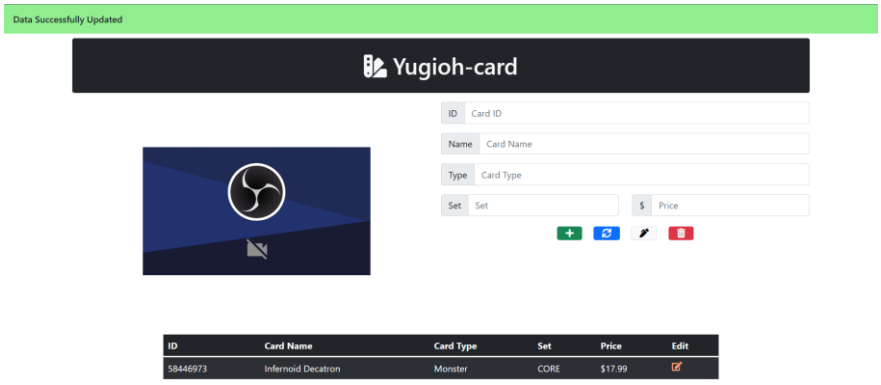

Figure 11. Card's information successfully updated

Figure 12. Card's information successfully updated (on MySQL database)

4.4. Delete the data

To delete a card's information, user needs to read the card first (either by clicking the edit button or reading the QR code, guided in section 4.2). After that, click the Delete button, then the information of the card will be deleted.

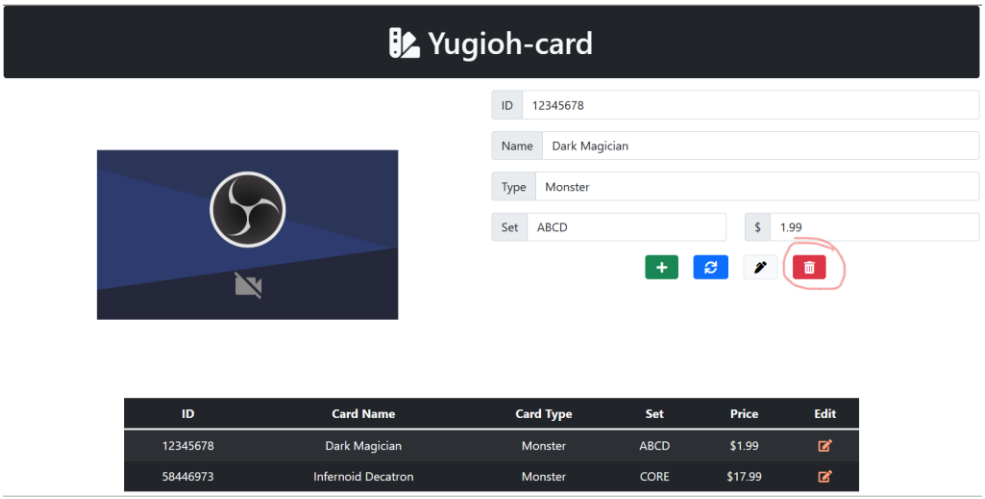

Figure 13. Update the card's information

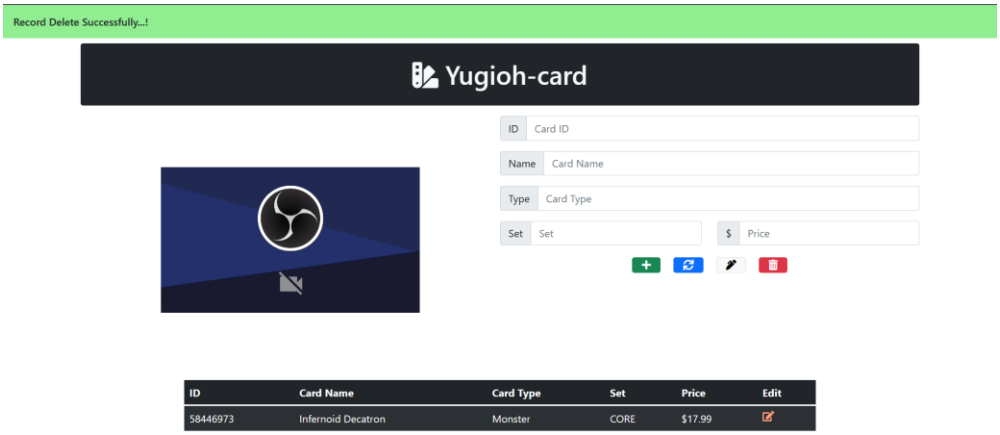

Figure 14. Card's information deleted successfully

If there are 3 or more cards on the database, the UI will appear a Delete All button. When user clicks the Delete All button, all cards on the database will be deleted.

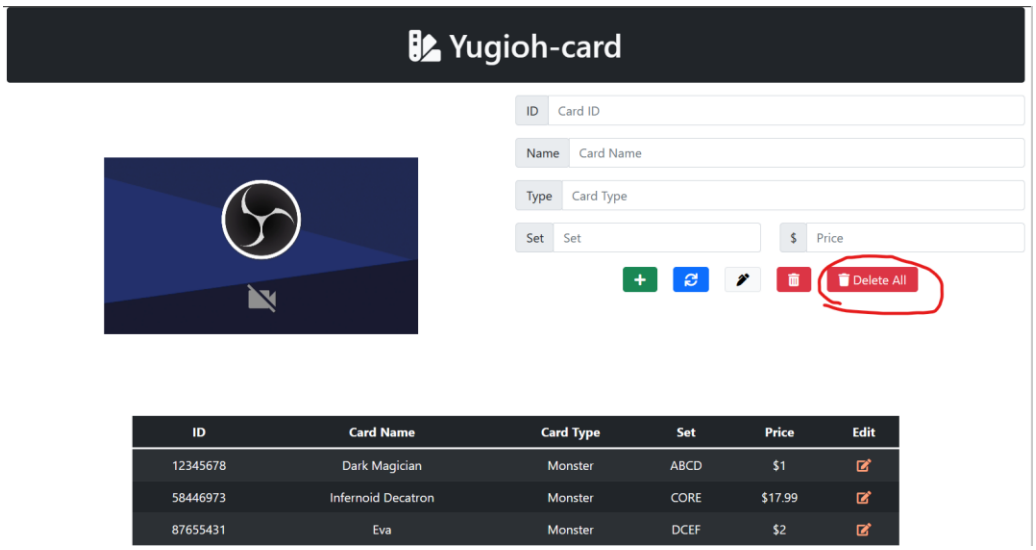

Figure 15. Delete All button

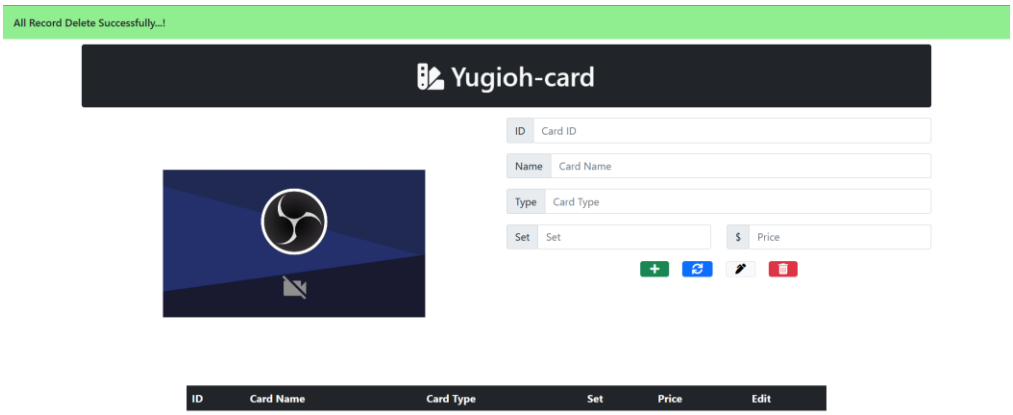

Figure 16. All cards' information deleted successfully

5. Discussion

5.1. Feature Review

Here is a summary of my current implemented features:

- Created a simple database to stored data.
- Implemented a simple application that can read QR code of the data.
- Implemented a simple application that can manipulate the data.

5.2. Remaining Problems

- The application does not look attractive.
- The application can only appear on localhost, not on a actual website.
- The application does not have a QR generator, while this can be solved using free online tools.
- The application does not have request authentication.

References

1. Geeksforgeeks, https://www.geeksforgeeks.org/

2. w3school, *MySQL Tutorial*, https://www.w3schools.com/mySQl/default.asp

3. stackOverflow, https://stackoverflow.com/